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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/881,763 | 06/18/2001 | Catharine Anne Maple | 1509-189 | 8249 |

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| EXAMINER | |
|---|---|
| RODRIGUEZ, GLENDA P | |
| ART UNIT | PAPER NUMBER |
| 2697 | 3 |

DATE MAILED: 06/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/881,763 | MAPLE ET AL. | |
| | Examiner | Art Unit | |
| | Glenda P. Rodriguez | 2697 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-12 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> > (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8 and 10-12 rejected under 35 U.S.C. 102(b) as being anticipated by Nonoyama et al. (WO 99/50850).

Regarding Claim 1, 7, 8 and 10, Nonoyama et al. teach a method/program/medium of locating a position on a linear data storage medium from which to write data, said method comprising the steps of:

Transporting said linear data storage medium past a read head (Page 9, Lines 4-15);

Reading a linear position data describing a linear position along said linear data storage medium and

from said linear position data determining an approximate position of an append position from which to start writing data (Page 18, Line 26 to Page 19, Line 8. Nonoyama et al. indicates that as soon as the data is recorded, each has its own append identification data that help the controller to identify the last append point to which data can be thus stored.);

Having found said approximate position of said append point, reading an absolute C1 code word quad identifier number to identify individual C1 code word quads along the length of said data storage medium (Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. Nonoyama et al. indicates that when appending data, the tape reel is reeled, detecting the target append point by the detectors. Nonoyama et al. indicates that by using

the controller, the medium reads the data, comparing it with the controller, until finding the target append data identification.);

Comparing said read head absolute C1 code word quad number with a target absolute C1 code word quad number (Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. Nonoyama et al. indicates that by using the controller, the medium reads the data, comparing it with the controller.);

Finding a correspondence between said read absolute C1 code word quad number and said target absolute C1 code quad number (Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. Nonoyama et al. indicates that by using the controller, the medium reads the data, comparing it with the controller, until finding the target append data identification.);

If a match between said read absolute C1 code word quad and said target absolute C1 code word quad number is found, then generating an interrupt signal to interrupt transport of said data storage medium past said read head (Page 10, Line 11 to Page 11 Line 25 and Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. It is known that in order for a magnetic tape to change operations from searching to writing or reading, an interrupt signal has to be emitted in order for the medium to recognize that the target data has been found.);

And commencing a write operation from a position of said read absolute C1 code word quad number which matches said target absolute C1 code word quad number (Page 10, Line 11 to Page 11 Line 25 and Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. Nonoyama et al. indicates that the

medium can perform both reading and writing unless the medium indicates otherwise.).

Regarding Claim 4, Nonoyama et al. disclose a method of locating an append point along a length of linear storage medium (Page 9, Lines 4-15 and Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9), said append point indicating a position from which to write data along said linear data storage medium (Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9), said method comprising the steps of:

Reading a plurality of absolute C1 code word quad numbers from at least one track of said data storage medium (Page 10, Line 28 to Page 11, Line 25. Nonoyama et al. teach that data is placed in groups in each read track, each track having its own append data different from the other groups.);

Comparing said read absolute C1 code word quad number with a pre-stored target absolute C1 code word quad number (Page 15, Lines 7-14 and Page

15 Line 26 to Page 16, Line 9. Nonoyama et al. indicates that by using the controller, the medium reads the data, comparing it with the controller.);

Finding a match between a read absolute C1 code word quad number and said stored target absolute C1 code quad number (Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. Nonoyama et al. indicates that by using the controller, the medium reads the data, comparing it with the controller, until finding the target append data identification.);

Generating an interrupt signal for interrupt of transport of said tape data storage medium (Page 10, Line 11 to Page 11 Line 25 and Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. It is known that in order for a magnetic tape to change operations from searching to writing or reading, an

interrupt signal has to be emitted in order for the medium to recognize that the target data has been found.).

Regarding Claim 11, Nonoyama et al. teach a tape data storage device comprising:

A read head and a write head (Page 9, Lines 11-13);

A tape transport mechanism for transporting said linear tape data storage medium across said read head and said write head (Page 9, Lines 4-21);

A search component operable to:

Read a linear position data describing a linear position along said linear data storage medium and from said linear position data determining an approximate position of an append position from which to start writing data (Page 18, Line 26 to Page 19, Line 8. Nonoyama et al. indicates that as soon

as the data is recorded, each has its own append identification data that help the controller to identify the last append point to which data can be thus stored.);

Read an absolute C1 code word quad identifier number to identify individual C1 code word quads along a length of said linear tape data storage medium (Page 10, Line 28 to Page 11, Line 25. Nonoyama et al. teach that data is placed in groups in each read track, each track having its own append data different from the other groups.);

Compare said read head absolute C1 code word quad number with a target absolute C1 code word quad number (Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. Nonoyama et al. indicates that by using the controller, the medium reads the data, comparing it with the controller.);

Finding a correspondence between said read absolute C1 code word quad number and said target absolute C1 code quad number (Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. Nonoyama et al. indicates that by using the controller, the medium reads the data, comparing it with the controller, until finding the target append data identification.);

If a match between said read absolute C1 code word quad and said target absolute C1 code word quad number is found, then generating an interrupt signal to interrupt transport of said data storage medium past said read head (Page 10, Line 11 to Page 11 Line 25 and Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. It is known that in order for a magnetic tape to change operations from searching to writing or reading, an interrupt

signal has to be emitted in order for the medium to recognize that the target data has been found.);

And commence a write operation from a position of said read absolute C1 code word quad number which matches said target absolute C1 code word quad number (Page 10, Line 11 to Page 11 Line 25 and Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. Nonoyama et al. indicates that the medium can perform both reading and writing unless the medium indicates otherwise.).

Regarding Claim 12, Nonoyama et al. teach a method of locating a position on a data storage medium from which to write data, said method comprising the steps of:

Reading a plurality of absolute C1 code word quad numbers from at least one track of said data storage medium (Page 10, Line 28 to Page 11, Line 25. Nonoyama et al. teach that data is placed in

groups in each read track, each track having its own append data different from the other groups.);

Comparing said read absolute C1 code word quad number with a pre-stored target absolute C1 code word quad number (Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. Nonoyama et al. indicates that by using the controller, the medium reads the data, comparing it with the controller.);

Determine a correspondence between said read absolute C1 code word quad number and said target absolute C1 code quad number (Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. Nonoyama et al. indicates that by using the controller, the medium reads the data, comparing it with the controller, until finding the target append data identification.);

On finding a correspondence, generating an interrupt signal for interrupt of transport of said tape data storage medium (Page 10, Line 11 to Page 11 Line 25 and Page 15, Lines 7-14 and Page 15 Line 26 to Page 16, Line 9. It is known that in order for a magnetic tape to change operations from searching to writing or reading, an interrupt signal has to be emitted in order for the medium to recognize that the target data has been found.).

Regarding Claim 2, Nonoyama et al. teach all the limitations of Claim 1. Nonoyama et al. also teach reading at least one absolute C1 code word quad number (Page 10, Line 28 to Page 11, Line 12. Nonoyama et al. teach that each segment of data is packed into groups, each segment having a sub-code in order to segment or distinguish each segment of data.).

Regarding Claim 3, Nonoyama et al. teach all the limitations of Claim 1. Nonoyama et al. also teach a method that further comprises distinguishing between a first and second written C1 code word pair within a same C1 code word quad, by searching for a synchronization field selected from the set(Page 9, Lines 15-27. Nonoyama et al. discloses that each group has a particular append point in each group of code words.); a forward synchronization field; a back synchronization field and a re-synchronizing field (Page 9, Lines 18-25 and Page 16, Lines 10-14. Nonoyama et al. indicates that the tape is able to move forward and backwards during searching.).

Regarding Claim 5, Nonoyama et al. teach all the limitations of Claim 4. Nonoyama et al. also teach distinguishing between a pais of absolute C1 code word quad numbers read from a pair of C1 code word pairs within a C1 code word quad (Page 10, Line 28 to Page 11, Line 12. Nonoyama et al. teach that each segment of data is packed into groups, each segment having a sub-code in order to segment or distinguish each segment of data.); selecting said append point as a first said C1 code

word pair within said C1 code word quad (Page 10, Line 28 to Page 11, Line 25. Nonoyama et al. teach that many data segments are placed in groups in each track, each track having its own append point different from the other groups.).

Regarding Claim 6, Nonoyama et al. teach all the limitations of Claim 1. Nonoyama et al. also teach a method that further comprises distinguishing between a first and second written C1 code word pair within a same C1 code word quad, by searching for a synchronization field selected from the set (Page 9, Lines 15-27. Nonoyama et al. discloses that each group has a particular append point in each group of code words.); a forward synchronization field; a back synchronization field, a re-synchronizing field (Page 9, Lines 18-25 and Page 16, Lines 10-14. Nonoyama et al. indicates that the tape is able to move forward and backwards during searching.) and a data separating field (Page 10, Line 28 to Page 11, Line 25. Nonoyama et al. teach that many data segments are placed in groups in each track, each track having its own append point different from the other groups.).

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nonoyama et al. (W099/50850) in view of Sakamoto (US Pat. No. 4, 390, 909). Nonoyama et al. teach all the limitations of Claim 8. Nonoyama et al. fail to teach comprising a read only memory device (i.e., ROM). However, this feature is well known in the art, as disclosed by Sakamoto, wherein it it discloses a tape drive with a ROM (Pat. No. 4, 390, 909; See Fig. 5, elements 31, 32, 33 Sakamoto indicates that these elements are ROM memory devices). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify

Nonoyama et al.'s invention in order for the medium to more efficiently monitor the scanning of data.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to Searching an Append Point in Data Storage Device:

- *"Construction of Error Resilient Synchronization Codeword for Variable-Length Code in Image Transmission"*, Department of Electronics Engineering, by Yew-San et al., 2000, IEEE. Pages 360-363, wherein it teach variable length code synchronization for en encoder decoder when transmitting packets of data.
- US Patent No. 5, 396, 374 to Kubota et al., wherein it teach an ID field used for synchronizing during recording.
- US Patent No. 5, 450, 250 to Garcia et al., wherein it teach a tape that has a appending of data method.

- US Patent No. 5, 633, 855 to Naito, wherein it teach a synchronizing method for a group of data blocks in a magnetic medium.
- US Patent No. 5, 818, 654 to Reddy et al., wherein it teach a magnetic device wherein it synchronizes reading/recording of data.
- US Patent No. 5, 384, 669 to Dunn et al., wherein it teach uniting groups of data blocks from a magnetic medium.
- US Patent 5, 543, 977 to Shih et al., wherein it teach a tape medium utilized in synchronized searching.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is 703-305-8411. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on 703-305-4717. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-6743 for regular communications and 703-308-6743 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9000.

gpr
June 10, 2003

Richemond Dorvil
Primary Examiner